

Comments on Draft 1 Version 2.0 ENERGY STAR External Power Supplies Specification

Submitted by:

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Comments:

Thank you for the opportunity to comment on the proposed specification for Version 2.0 for External Power Supplies. This response should be considered as the inputs from Texas Instruments and are offered herein as there may be no one available to participate in the teleconference planned for November 13.

1. This specification raises the bar substantially in its efficiency goals but in so doing, fails to recognize fundamental relationships between input voltage and output voltage on efficiency. The claim is made that 1834 power supplies were tested with 27 % passing these new Active Mode limits of 87%. However, when the data is examined we found only three units above 36 Watts, operating from 115 VAC and delivering an output voltage of less than 15 VDC that met or exceeded 87% efficiency. And of these three, only one had acceptable power factor.
2. The specification says that where units are designed to operate on dual input voltage levels, testing is to be done at both 115 and 230 VAC and the lower efficiency number is the one that applies. This unduly penalizes any supply with 115 VAC capability. The same uneven penalty applies to supplies designed for output voltages less than 12 Volts. If the specification is intended to push the limits – as it should be – then these differences in operating conditions must be recognized.
3. Low voltage power supplies within the range of 36 to 75 Watts of output power have largely been implemented with simple flyback circuit topology, chosen primarily for its low cost. However this topology has inherent internal losses from transformer leakage inductance and output rectifier voltage drop that limit efficiency. While solutions to reduce these losses exist, they add substantial circuit complexity, meaning that at some efficiency level, a significant step increase in cost may be experienced.
4. The addition of a requirement for high power factor is a good thing for overall energy conservation but it should be recognized that the attendant benefits are not realized within the power supply but in the distribution system that feeds the supply. Typically, there will be a loss in efficiency with the addition of PFC to a power supply and this should be recognized with a slightly lower efficiency limit in the specification.
5. We see no benefit in changing the threshold for active power calculations from 49 W to 36 W, and would rather see this threshold set at 51 W if for no other reason than to harmonize with the European requirements. Internationally harmonized test conditions and limits should always be a goal requiring significant justification for any deviation.

Once again, we thank you for the opportunity to comment and will hope to participate in ongoing discussions resulting from next week's teleconference.

Regards,

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